

CLAIMS

1. A centrifugal impeller comprising:

5 a plurality of blades disposed between an impeller inlet
and an impeller outlet;

a plurality of fluid paths for delivering a fluid from
said impeller inlet to said impeller outlet with the rotation
of said centrifugal impeller, each of said fluid paths being
formed between adjacent two of said blades; and

10 a shroud and a hub for forming said fluid paths;

wherein in a meridional-plane cross-section of said
centrifugal impeller, a curved line of said shroud, which forms
said fluid path, curves so as to project toward said hub in a
region from a blade inlet to a predetermined position of said
15 blade, and said curved line curves so as to project toward the
opposite side of said hub in a region from said predetermined
position of said blade to a blade outlet.

2. A centrifugal impeller according to claim 1, wherein
20 said predetermined position of said blade is located near a center
of said blade in a meridional plane.

3. A centrifugal impeller according to claim 1 or 2, wherein
stream lines formed at a side of said hub and a side of said
25 shroud correspond to each other when viewed in an axial direction
of said centrifugal impeller.

4. A centrifugal impeller according to any one of claims
1 to 3, wherein a distance between adjacent two of said blades
30 is gradually increased from said blade inlet to said predetermined
position of said blade, and is decreased from said predetermined
position of said blade toward said blade outlet.

5. A centrifugal impeller comprising:

a plurality of blades disposed between an impeller inlet and an impeller outlet;

5 a plurality of fluid paths for delivering a fluid from said impeller inlet to said impeller outlet with the rotation of said centrifugal impeller, each of said fluid paths being formed between adjacent two of said blades; and

a shroud and a hub for forming said fluid paths;

10 wherein a distance between adjacent two of said blades is gradually increased from a blade inlet to a predetermined position of said blade, and is decreased from said predetermined position of said blade toward a blade outlet.

6. A centrifugal impeller according to claim 5, wherein
15 said predetermined position of said blade is located near a center of said blade in a meridional plane.

7. A centrifugal impeller according to claim 5 or 6, wherein
20 stream lines formed at a side of said hub and a side of said shroud correspond to each other when viewed in an axial direction of said centrifugal impeller.

8. A pump apparatus comprising:

25 a centrifugal impeller according to any one of claims 1 to 7;

a casing for housing said centrifugal impeller; and

a rotatable main shaft to which said centrifugal impeller is attached.